Attachment #3

Installation Guidelines for Fiberglass Polyester Engineered Paving Mat under Hot Mix Asphalt Concrete (HMAC)

For proper performance, it recommended that these installation guidelines are followed.

- Power broom, sweep or vacuum the pavement before installing *fiberglass polyester* engineered paving mat. The pavement surface should be dry and free of dirt and gravel prior to installation.
- Fill cracks as necessary. Fill all cracks 1/4 inch (.63cm) or larger with an approved material.
- Repair and patch potholes and failed pavement areas prior to *Fiberglass polyester* engineered paving mat installation. A scratch or level-up course may be used if deemed necessary by the Engineer.
- **Always** use hot asphalt tack. **Do not** use emulsions or cutbacks for the installation of *Fiberglass polyester* engineered paving mat.
- Apply *Fiberglass polyester* engineered paving mat while the asphalt tack is still liquid. **Do not** let the asphalt distributor get too far ahead of the tractor / installer.
- Ambient temperatures for installation of *Fiberglass polyester* engineered paving mat should be 40°F (4°C) or higher.
- Optimum tack temperature is between 300°-400°F (149°-204°C) at the installation point.
- Minimum HMAC overlay thickness should be 1.5 inch (3.8cm) or in accordance with Asphalt Institute (AI) guidelines[1]

Fiberglass polyester engineered paving mat should always be installed over a hot asphalt tack coat. We recommend a tack of AC-20, 64-22, AR-8000 (see NOTE), or 60-80 penetration grade of asphalt. For extremely high summertime temperatures higher viscosity asphalt should be used. AC-30, PG67-22, AR-8000 (see NOTE), or 40-60 penetration grade are appropriate.

> *NOTE: Residue grades such as AR grades do not specify initial viscosity. Bituminous materials specified for Fiberglass polyester engineered paving mat installation should have initial or un-aged viscosities corresponding to the above AC grades.*

Optimum tack application rate is 0.20 g/sy (.90 l/m^2), but this may be adjusted slightly (.18-.25 g/sy [.82-1.1 l/m^2]) to take into account the condition of the existing surface.

[1] As the Asphalt Institute's recommendations evolve, so may the corresponding recommendation. That statement in this guideline only apply to the Asphalt Institute's recommendation in effect as of December 1, 2004.

Fiberglass polyester engineered paving mat can be installed using a tractor or truck-mounted frame with metal rollers to smoothly un-roll the paving mat onto the pavement surface. Brooms should be aligned behind the installing roll to seat the *Fiberglass polyester* engineered paving mat into the tack coat. An overlap minimum of 2 inches (5.1 cm) longitudinally and 4 inches (10.2 cm) transversely shall be used. The top surface of transverse joints should run in the direction of the paving operation, and all joints should be tacked together.

Take care in unloading *Fiberglass polyester* engineered paving mat. The rolls can be damaged if dropped from the truck.

Fiberglass polyester engineered paving mat is not degraded by sunlight, but should be protected from getting wet during storage. There is no "top" or "bottom" side to *Fiberglass polyester* engineered paving mat and it may be installed by unrolling the material in either direction.

If wrinkles occur, any wrinkle 1 inch (2.5 cm) and larger shall be slit and lapped in the direction of paving and manually seated into tack. *Fiberglass polyester* engineered paving mat shall be broomed and/or rolled in order to maximize pavement contact and remove air bubbles. The width of the liquid asphalt application shall be the mat width, plus 4 inches (10.2 cm). *Fiberglass polyester* engineered paving mat will not easily bend or stretch around curves. To ease installations in these areas, *Fiberglass polyester* engineered paving mat can be placed in shortened lengths by mechanical equipment or by hand.

Turning of paving machine or of other vehicles on the installed mat should be gradual and shall be kept to a minimum to avoid damage to the mat. Should equipment tires stick to the mat during pavement operations, HMAC can be broadcast on the mat to prevent pick-up by the wheels. Do not decrease the tack rate in order to minimize pick-up on tires. Best practice would be to broadcast/seed over all overlaps.

The pavement may be opened to traffic after installation of *Fiberglass polyester* engineered paving mat at the contractors/engineers discretion.